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System of Rice Intensification (SRI) method; a boon for rice paddy farmers of
Chilika Lake Basin, India.

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Rice (*Oryza sativa* L.) is the basic diet of approximately 40% of the world's human population (Kundu & Ladha, 1999). Rice is the traditional staple food in most part of Asia. Agriculture, and mainly paddy cultivation and related occupations, provides the livelihood for a significant population of Asia. The Green Revolution focussed mainly on irrigated areas (Dobermann & White, 1999). However, in order to reach sustainable levels of rice production, the rain fed lowland areas must be developed as they possess the potentials of increasing future rice production (Dobermann & White, 1999). The rice paddy supports an amazing aquatic biodiversity. Sustainable development of aquatic biodiversity in rice-based ecosystems is essential to human well-being and to the livelihoods and cultural integrity of individuals and societies and thus plays a critical role in overall sustainable development and the eradication of poverty. In recent decades, an ever-increasing human population and related intensive farming practices, including a far greater dependence on chemical pesticide and fertilizer applications are exerting growing pressure on living aquatic resources. However the rice yields in irrigated rice areas in Asia have stopped increasing during the last decade and with a still increasing human population the need for a continuous increase is highly necessary (Tsujiimoto et al., 2009). The System of Rice Intensification (SRI) method of rice cultivation is based on the insights that rice has the potential to produce more with less water requirement and other inputs like insecticides and chemical fertilizer can fulfil this potential (Uphoff, 2002). In view of the looming crisis of water, increase in use of insecticide and chemical fertilizer for rice cultivation posing threat to aquatic biodiversity and is turning unsustainable. SRI method of rice cultivation appears to be a better alternative and environment compliant that relies on natural amendments such as compost and green manure. This paper discuss on the advantages of SRI methods of rice cultivation adopted by the farmers of Chilika Lake basin and its role to mitigate GHG emission and threat to aquatic biodiversity at the same time increase soil quality through carbon sequestration.

Key words: Chilika, rice , aquatic biodiversity, SRI method, green house gas, emission

